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E D I N B U R G H:

D E L I V E R E D A S T H E

H A R V E I A N O R A T I O N A T E D I N B U R G H,  
*For the Year 1788.*

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A N D R E W D U N C A N, M. D. F. R. & A. S. E D.

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*Virtutem enim illius viri semper amavi.*

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M, DCC, LXXXIX.



## *ADVERTISEMENT.*

**T**HE following account of Dr Hope, was first delivered as the Harveian Oration at Edinburgh, and has, since that time, been published in the Medical Commentaries for 1788. But, for the accommodation of some, who, although not of the medical profession, are desirous of possessing it, the author has been induced to publish it also in a separate form.

EDIN. Dec. 10. }  
1788. }



# HARVEIAN ORATION

AT *EDINBURGH*,

For the YEAR 1788.

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GENTLEMEN,

I AM now to address you, in the discharge of the duties of my office, as one of the Secretaries of the Harveian Society of Edinburgh. Ten years have already elapsed, since an annual meeting was instituted at this place, to be held on the birth-day of the illustrious discoverer of the circulation of the blood. An ardent desire to preserve the remembrance of distinguished merit, to hold forth examples worthy of imitation, and to encourage the exertions of rising genius, were the principal motives which gave beginning to this institution.

“ At this meeting, Gentlemen, I mean to present you with a short account of the life, writings, and character of the late Dr John Hope, professor of botany in the University of Edinburgh. Were my abilities equal to the task, there can be little doubt, that a proper picture of such worth as was exhibited in his conduct, might excite emotions in the mind of every hearer, which could not fail to be productive of the best effects: And, however unequal I may feel myself to the undertaking, yet I trust, that even a simple relation of facts, and an humble attempt to do justice to superior merit, may be favoured with some share of your approbation.

Dr Hope was born at Edinburgh, on the 10th of May 1725. He was the son of Mr Robert Hope, a respectable surgeon, whose father, Lord Rankeilar, made a distinguished figure as one of the Senators of the College of Justice, in the kingdom of Scotland. By his mother, Marion Glas, he was descended from the ancient family of Glas of Sauchie, in Stirlingshire. When he had arrived at the period of life at which the study of the learned languages is usually begun, his father placed

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ced him at the school of Dalkeith, then one of the most celebrated in Scotland, from the abilities of Mr Barclay, whose philological labours are still highly instructive both to the Greek and Latin scholar. After finishing the usual course of school education, with no inconsiderable degree of approbation, he entered to the University of Edinburgh; and having, as it were, an hereditary predilection for the healing art, his attention was soon particularly directed to that branch of science.

While he had the good fortune of studying at a period when mathematics was taught at Edinburgh by the immortal M'Laurin, and other branches of philosophical knowledge were entrusted to able teachers, he had also the happiness of being the pupil of those eminent professors, whose industrious exertions not only laid the foundation of the medical school at Edinburgh, but gave it a distinguished reputation over all Europe. At that period, the late Dr Monro, and his worthy colleagues, had matured their lectures by industrious reconsideration for a series of years, while they still possessed that vigour, both of mind and body, which rendered them equal to the

greatest exertions. But if he had thus an opportunity of profiting by the best fruits of their labours, he had also a peculiar advantage in the instructions he derived, from witnessing the practice, and hearing the remarks of an intelligent and affectionate father. It is not therefore wonderful, if, among the companions of his studies, to whom he was endeared by his manners, he should also have been esteemed for his knowledge; and of these there were many who have, since that, been justly distinguished as eminent practitioners and ingenious authors. Among these we may mention the names of David Clerk, Patrick Ruffell, William Fordyce, and Richard Smith, names which would do honour to any list. With these and similar associates, Dr Hope made a distinguished figure in the Medical Society of this place; and he was one of the first whom that useful institution, which has now for many years been justly celebrated as an happy source of improvement to the industrious student, raised to the rank of an honorary member. After finishing his academical education at Edinburgh, he visited other medical schools; and he had thus an opportunity



nity of studying botany; a branch of medical science to which he had shown an early propensity, and to which he had always bestowed no inconsiderable degree of attention, under Bernard Jussieu, professor at Paris, at that time one of the most celebrated botanists in the world.

But the good fortune, with which many parts of his earlier studies were attended, did not flow in an uninterrupted series. For, ere the course of education was finished, he sustained an irreparable loss by the death of his father; an event which not only deprived him of the ability of prosecuting his studies with the advantages he had formerly enjoyed, but which rendered his exertions necessary, both for his own support, and for the assistance of those, to whom he was not less strongly attached by the ties of affection than of nature.

Upon his return to his native country, he obtained the degree of Doctor of Medicine, from the University of Glasgow, in the beginning of the year 1750. A few months after that, he was admitted a member of the Royal College of Physicians in Edinburgh, and entered upon the practice of medicine in  
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this city. After he had continued about ten years in practice, discharging the duties of his profession, with a degree of judgment, of attention, and of humanity, which did him great honour; by the death of Dr Alston, the botanical chair in the University became vacant. Dr Hope's early attachment and steady partiality to that branch of science, naturally pointed him out as a successor, into whose hands the credit of the University might safely be entrusted, and by whose exertions, its fame might not only be supported, but extended. Accordingly, by a commission from his Sovereign, dated the 13th of April 1761, he was appointed King's botanist for Scotland, and superintendant of the royal garden at Edinburgh. A few weeks after this, he was elected by the Town-Council of Edinburgh, as the successor of Dr Alston in the professorships both of botany and materia medica; and thus he became one of the members of the faculty of medicine in the University. After he had continued for about six years to give regular courses of lectures on these subjects, with no less credit to himself than benefit to his hearers, teaching the one branch during the Summer,

mer, and the other during the Winter months, he found that his health was considerably impaired; which was ascribed, and probably not without justice, to his unwearied and constant exertions as a teacher. From this he was led to form the resolution of resigning the *materia medica*, and of afterwards solely confining his labours as a teacher, to his favourite science of botany. This resolution he carried into effect in the year 1768; and by a new commission from his Majesty, dated the 8th of May, he was nominated *Regius Professor* of Medicine and Botany in the University, and had the offices of King's botanist and superintendant of the royal garden conferred upon him for life, which, till that time, had been always granted during pleasure only. But although he reckoned his state of health incompatible with a faithful discharge of the duties of two professorships, each requiring much application in the way of study, yet this did not prevent him from bestowing even an uncommon degree of attention on very extensive private practice; and, not many months after he had resigned the professorship of *materia medica*, he was elected physician

physician to the Royal Infirmary, then vacant by the death of the late worthy Dr David Clerk. The duties of this office he discharged, till almost the day of his death, with a degree of attention and humanity, which can hardly fail to be remembered by thousands of the indigent, with the warmest feelings of gratitude.

About ten years after Dr Hope had settled in business, he married Juliana Stevenson, the daughter of Dr Stevenson, an eminent physician in Edinburgh. By her he had four sons, and one daughter; and although it is not to be expected that a parent can ever be altogether without care, yet it is perhaps a parent alone who can taste real sublunary happiness to its fullest extent. It was the will of Heaven, to bestow upon Dr Hope no inconsiderable share of domestic felicity. While, however, he thus continued to enjoy the smiles of fortune at home; while he received the most flattering marks of esteem from the learned abroad, having been elected a member not only of the Royal Society of London, but also of several celebrated foreign societies, and having been enrolled in  
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the first class of Botanists even by the great Linnæus, who denominated a beautiful shrub by the name of *Hopea*; and at a time when he might be justly considered as at the very head of his profession in Edinburgh, holding the distinguished office of President of the Royal College of Physicians; he was seized with an alarming illness, which, in the space of a few days, put a period to his valuable life, on the 10th of November 1786, in the 62d year of his age.

By this event, while the public suffered severely, his own family sustained an irreparable loss; and although he might with confident satisfaction reflect, that, by provident industry, he had secured them against want, yet it is but natural to suppose, that, even in his last moments, it would be a source of some anxiety to him, that none of his children could then be considered as settled in life. What, however, has since happened, may afford consolation to other parents in similar circumstances; for within the short space of a month after his death, all his sons were placed in situations, where even moderate industry and abilities can hardly fail to insure success.

success. Thus, by the aid of an overruling Providence, more has been done for them, than an affectionate and zealous parent could have reasonably expected, even in the moments of his most sanguine hopes.

Having thus given a brief sketch of Dr Hope's life, I shall, in the further prosecution of this discourse, offer a few observations on his character and conduct, as a Botanist, and as a Man.

Botany, while it was his principal official employment, was also, as we have already said, his favourite study. To demonstrate how much in this particular his country was indebted to him, let us compare the condition in which he found that science at this place, with the state in which he left it. Dr Hope's predecessor, although a learned and worthy man, could never obtain sufficient public funds, for the establishment of a proper botanical garden at Edinburgh; and from the situation, as well as the extent of the garden at that time, joined to the smallness of its conservatories for plants, it could boast of no riches in the way of exotics. The only field for improvement, therefore, to the  
botanical



botanical student, was the environs of Edinburgh, to which it must indeed be allowed, that nature has been uncommonly liberal, in affording a very great variety of indigenous vegetables. In this situation, the establishment of a new garden naturally suggested itself, as a grand and important object; and in the accomplishment of this, Dr Hope exerted that degree of industry and judgment which will seldom fail of success, where the object, whatever its magnitude may be, is rational and proper. The attachment which the Earl of Bute is well known to have for botanical studies, and the great expence he had incurred for the engravings of the vegetable system, published under the name of Sir John Hill, naturally pointed out his administration as a proper period for making application for public aid to this undertaking. It was peculiarly fortunate for this application, that Lord Bute was at that time the minister of a King, no less regarded at home as the father of his people, than celebrated over the world as the patron of science. In consequence of a judicious memorial, the wished-for assistance was obtained. But the procuring sufficient funds

funds for the purpose, was not the only difficulty that Dr Hope had to combat. Money alone cannot create a botanical garden; and, in such an undertaking, it is a much easier matter to mispend money, than to employ it to the best advantage. Dr Hope fixed upon a spot for the situation of his garden, which, while it was of less intrinsic value than almost any other he could have selected, possessed many local advantages. While in the vicinity of the city, it was yet removed from the influence of its smoke, and it afforded a very considerable variety both of soil and exposure. Although the greater part of it consisted either of barren sand or useless morasses, and could therefore be purchased at an easy rate, Dr Hope well knew, that, by proper culture, these would be highly conducive both to the beauty and utility of the garden; and the uncommon attention which he bestowed on that culture, could only be equalled by the judgment with which it was conducted. His unwearied exertions, in procuring for the garden the vegetable productions of every climate, could not be exceeded. His endeavours were constantly directed in adding, not



to the show, but to the riches of the garden ; and they were employed with such success, that, in a very short time, the intelligent botanist might gratify his curiosity, in contemplating the rarest plants of every country which has yet been explored, on a spot which, but a few years before, could be considered as little better than a barren waste, hardly producing even a pile of useful grass. A striking proof of the power of human industry, when assiduously and judiciously directed to an important object.

But while these exertions were able to make such progress, Dr Hope had yet reason to regret, that his endeavours, as well as his wishes, were much limited, by the scantiness of his annual allowance. He could hardly, however, expect, that, during an expensive and unnatural war, those who were then the King's ministers, would bestow much attention on objects of science. But no sooner were the blessings of peace restored, and the Duke of Portland placed at the head of his Majesty's councils, than Dr Hope saw that a most favourable opportunity was offered for supporting and increasing the riches of his

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garden, by obtaining a proper addition to its funds. He had then access to his Sovereign, by means of a Nobleman uniformly distinguished by the most amiable virtues; a Nobleman who had an hereditary claim to be the patron and protector of botany; a Nobleman, whose mother, then alive, but whose death Science may now sincerely deplore, was at once the ornament of her sex, and one of the greatest encouragers of botanical studies in the known world. The application for additional aid was no sooner made, than it met with the attention it deserved; and the readiness with which it was granted, at once demonstrated the views of the Minister, and the disposition of the Man. This interposition was no effect of borough politics, or election manœuvres. It was so far spontaneous, that the application was unknown, even to the Town-Council, the Patrons of the University, till the request was granted. And upon good information I can assert, that if this truly patriotic minister had continued but a short time longer at the head of his Majesty's councils, the University of Edinburgh would soon have been indebted to him

him for other marks of Royal favour. The Portland administration, even short as it was, had the happiness of bestowing upon their country many inestimable blessings, which deserve the warmest thanks of every Briton. But a faithful attention to national concerns of the first magnitude, did not prevent the Duke of Portland from also paying attention to Science; and he established a permanent fund for the support of the botanical garden at this place, which may render it not inferior to any in Europe. To Dr Hope, who was the first mover in every thing respecting that garden, his Country in particular, and Science in general, are indebted, for all the advantages resulting from that establishment.

But Dr Hope's industrious exertions were no less assiduously bestowed in forming and enriching the garden, than in cherishing and promoting a zeal for botanical studies. From but a very small number of lectures, which were all that his predecessor ever gave, he gradually prolonged the course, till it became as complete as any one delivered at this place; and during all this extended course, he taught in such a manner, as clearly demonstrated a

degree of ardour and enthusiasm in himself, which could hardly fail to inspire similar emotions in others. But even such precept, and such example, were not the only means he employed for directing the attention of the industrious, ingenious, and laudably ambitious student, to this branch of science. By bestowing, entirely at his own expence, an annual gold medal, as a testimony of superior merit, he gave a spur to exertion, from which the toils of study were alleviated by the love of fame, and the labours of industry converted into the pleasures of emulation.

But while he encouraged the exertions of rising genius, by honorary rewards to the living, he furnished it also with an additional spring of action, by the tribute of applause to the dead. The world were no sooner deprived of the great Linnæus, than Dr Hope formed the resolution of inculcating a constant attention to his merit upon the mind of every student. For this purpose, he erected, in a well-chosen spot within the garden, at his own private expence, an elegant monument to that illustrious botanist. It contains only this simple inscription, *Linnæo posuit Joannes Hope.*

Hope. But by thus placing the name of Linnæus in the eye of every student, he furnished an infallible means of constantly calling to their recollection the merit of his writings ; while the intelligent and contemplative observer cannot pass the spot, without feeling, in proportion to the liberality of his own mind, those pleasing emotions of gratitude which the generous heart is ever ready to bestow on intrinsic merit.

But it was not merely on such conspicuous characters as those of Linnæus, that Dr Hope employed his endeavours in bestowing the just tribute of well-earned approbation. The operative gardener, who, under his direction, had conducted the formation of the new garden, John Williamson, a worthy and respectable man, while employed in the service of his Sovereign, was snatched from his family and friends by a premature death. Dr Hope well knew how much was owing to his industrious exertions ; and he was unwilling that it should either be forgotten by others, or unknown to posterity. To record his merit, therefore, he also erected a monument in the garden.

It has often been suggested, and, in my opinion, it is an idea which ought to be cherished, that, by a suitable monument in the same garden, a generous city ought also to record their grateful remembrance of the distinguished services of Dr Hope. It is with some satisfaction I learn, that a friend to genuine worth soon intends to pay such a tribute of applause to his memory, in a more private manner. But although no marble should ever be marked with his name, yet, while the Edinburgh botanical garden itself is entrusted to honest superintendants, and shall survive the wreck of time, it will furnish to every beholder a more beautiful and magnificent monument, than human invention, or human art, can either devise or execute.

Dr Hope will also long be remembered, by those writings on botanical subjects which he has bequeathed to posterity. In these his principal object seems to have been, to make botany subservient to the arts more immediately useful in life, and particularly to medicine. Of the truth of this assertion, besides several publications intended to facilitate the study of

botany,



botany, which, though they could not be esteemed original works, were yet highly useful to his pupils, the papers which he published in the Philosophical Transactions, on the *Rheum palmatum*, and the *Ferula assafoetida*, afford incontrovertible evidence. While he was one of the first, who, in conjunction with the late worthy Sir Alexander Dick, turned his attention to the practical cultivation of rhubarb in Britain; by the publication to which I allude, he communicated the important truth, of its luxuriant growth in this island, to other botanists; and he demonstrated the facility with which it might be multiplied. He lived to see it cultivated in such abundance, that the British market was no longer under any necessity of depending upon foreign climates for this valuable, and once expensive medicine. The cultivation of the *assafoetida* plant, has not hitherto, indeed, made equal progress: but Dr Hope has clearly shown, that, by proper attention, it not only bears the vicissitudes of our climate, but grows in such a vigorous and healthful state, as to be fully impregnated with its active gum. There is therefore reason to

hope, that, by the exertions of future industry, the shop of the apothecary may be supplied with this article also from his own garden.

Besides these publications immediately subservient to utility, Dr Hope had in contemplation a more extensive botanical work, on which he had bestowed much study and reflection. It was his wish, to increase those advantages which result from the very ingenious and useful artificial arrangement of Linnaeus, by conjoining it with a system of vegetables, distributed according to their great natural orders. For this purpose, no inconsiderable part of that time which he could spare from other unavoidable engagements, was employed in attempts to improve and perfect natural method in the arrangement of vegetables. In this work he had made very considerable progress; and it must be the subject of sincere regret to every lover of botany, if, from the event of his death, the public shall be for ever deprived of those fruits of his labours.

It is however to be hoped, that this work will yet be completed, and published by some one of the able botanists who were educated  
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under his tuition. None of them, perhaps, is better qualified for the undertaking, than his third son, now a professor in the University of Glasgow. But should his present academical pursuits, or other unavoidable engagements, prevent him from turning his attention to this subject, there are several eminent botanists, who ought to be prompted by the ties of gratitude, to transmit to posterity the writings of Dr Hope, in the form most conducive to his fame. To him, many of them are deeply indebted : for, of all the distinguishing, and amiable features of his character, none was more remarkable, than the generous and disinterested patronage which he afforded to modest merit, when repressed by indigence. Both the East and West Indies, and indeed every quarter of the globe, can furnish examples of his discernment of real worth, and of the munificence with which he cherished and supported it. From a judicious selection of the objects of his patronage, he was enabled, by means of what he could easily spare from a moderate income, to send into the world such merit, as might excite at once the envy and the admiration of those, whose princely

princely fortunes enable them to bestow the highest encouragement on science.

Although he possessed from nature a considerable heat of temper, yet this was so regulated by the dictates of prudence, that it led only to such exertions as were good and useful. Although he often mentioned to his most intimate friends the trouble it was necessary for him to bestow, in combating the keenness of his passions; and although he frequently expressed his regret that he had not been able to overcome them, yet, after an intimate connexion for more than twenty years, I am unacquainted with even a single instance, in which they betrayed him into any impropriety of conduct. Passions thus regulated, are rather objects of desire, than of regret; for it is by these alone, that the cool indifference of philosophy can be made to partake of the tender feelings of human nature.

In one word—Dr Hope's conduct through life, exhibited to every attentive and candid observer, a striking picture of an able philosopher, an amiable physician, a sincere friend, an affectionate parent, and a worthy man.—And however defective the character I have attempted

attempted to draw may be, in many particulars, yet the account which has been given, can hardly fail to afford to every hearer a striking proof, how much even a single individual is able to accomplish, when his exertions are steadily and judiciously directed to the attainment of virtuous and important objects; and I trust, that many of those who are now present, will consider his meritorious conduct as an example worthy of imitation.—The good citizen and the firm friend, has sources of enjoyment to which the selfish mind is an entire stranger. For, to use the words of an elegant modern poet, we may conclude with observing,

“ Friendship remains through changing time,  
 “ Remains superior and sublime :  
 “ Pure and unmix’d, her joys we share,  
 “ Nor selfish passion rankles there :  
 “ Balm to the wounded heart’s corroding woes,  
 “ Peace to the weary spirit’s final, solemn close.”

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At the annual meeting of the Harveian Society of Edinburgh, of the 12th of April 1788, after the anniversary discourse was delivered by Dr Duncan, the annual premium given by the society, was publicly presented to Mr Joseph Pinto Azeredo from the Brazils, who was found to be the author of a dissertation on the chemical and medical properties of those substances called Lithontriptics; to which was prefixed for a motto, "*Multum egerunt qui ante nos fuerunt, sed non peregerunt; multum adhuc restat operis, multumque restabit, neque ulli nato post mille sæcula præcludetur occasio, aliquid adhuc adjiciendi:*" and which, in the unanimous opinion of the judges, was the best, presented to the society on that subject. It would be impossible to do justice to this dissertation by a summary

mary account of the various matter which it contains ; but it may not be improper to mention a few particulars.

After giving a general and ingenious account of the different kinds of animal concretions, and particularly of the urinary calculus, of the symptoms it occasions, and the solvents that have been employed ; and after briefly relating the various opinions of authors on these subjects, he proceeds to a detail of his own experiments. These relate to the analysis of the stone, and its solvents.

He not only tried various solvents out of the body, but after taking solvents internally, he observed the effects of the urine on calcali kept in a proper temperature : And besides this, he introduced calculi into the bladders of dogs, and injected solvents, both by the mouth and urethra.

As to the analysis, he paid particular attention to the acid, which was merely mentioned by Scheele and Bergman ; and, from an investigation of its chemical properties, he is disposed to believe it analogous to what has been called *acidum perlatum*, if not precisely the same.

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From various experiments he concludes, that there are two kinds of calculi, the one soluble in different menstrua, the other in none yet known; but that those in which lime or magnesia are ingredients, are soluble by means of fixed air. This he prefers to every other solvent. He did not find lime-water, the caustic alkali, or the vitriolic acid, taken internally, produce any effect on calculus.

Upon the whole, all his experiments, to the number of 106, are conducted with great judgment; and the inferences which he draws from them, are highly important, both in a chemical and medical view.

The subject of investigation proposed by the Harveian Society for 1788, is an experimental enquiry into the nature and properties of the *Nicotiana Tabaccum* of Linnæus; into the different active constituent parts of this vegetable, their effects on the human body, and their use in the cure of diseases.

The subject proposed for 1789, is an enquiry into the nature and properties of those chemical products, which are obtained from a combination of ardent spirit with acids.

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This curious, but hitherto obscure subject, affords room for many experiments, and may give birth to ingenious conjectures, particularly respecting the three medical products obtained from ardent spirit and vitriolic acid, viz. æther, dulcified spirit, and Hoffman's anodyne liquor. The general effects of these three forms on the human body ; the cases to which each is peculiarly adapted ; and, lastly, the manner in which acids modify the effect of spirits, as in the alleged case of intoxication, will afford curious subjects of investigation.

Dissertations on the first of these subjects, must be transmitted to Doctors Duncan or Webster by the 1st of January 1789 ; and on the last, by the 1st of January 1790















